

What is claimed is:

1 1. A linear motor coil assembly for developing linear motion, comprising:
2 a plurality of coils arranged in a line in a direction of movement, each coil
3 having an associated coil shaft, said coil shafts being perpendicular to the direction
4 of motion; and
5 a flat cooling tube, said cooling tube having a cross section elongated in a
6 direction parallel to the coil shafts and folds into which said coils are adapted to
7 engage, said cooling tube meandering inside the plurality of coils.

1 2. The linear motor coil assembly according to claim 1, wherein the flat
2 cooling tube has a plurality of clearance holes for passing coolant, said clearance
3 holes being formed in a direction parallel to the coil shafts.

1 3. The linear motor coil assembly according to claim 1, wherein the flat
2 cooling tube comprises a plurality of round pipes for passing coolant, said pipes
3 being aligned and attached in a direction parallel to the coil shafts.

1 4. The linear motor coil assembly according to claim 1, wherein the flat
2 cooling tube has interleaved folds at least equal in number to the number of coils.

1 5. The linear motor coil assembly according to claim 1, wherein the
2 elongated cross section of the flat cooling tube is the same as, or slightly larger than,
3 the length of the coils in an axial direction.

1 6. The linear motor coil assembly according to claim 1, further comprising
2 cores, divided for each coil, around which the coils are wound.

1 7. The linear motor coil assembly according to claim 6, further comprising a
2 base plate, the cores being fixed to the base plate in a line generally parallel to the
3 direction of motion.

1 8. A method of manufacturing a linear motor assembly for developing linear
2 motion, comprising the steps of:

3 providing a plurality of cores divided for each magnetic pole;
4 winding coils around the respective cores;
5 providing a flat cooling tube having interleaved folds, the number of folds
6 being at least equal to the number of coils, said folds being changeable by the coils;
7 fitting the core into the folds; and
8 arranging the cores in a line.